

# Notice of Allowability

Application No.

10/658,109

Examiner

Brian Ensey

Applicant(s)

ROSENTHAL, JOYCE

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2615

## -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to after final amendment dated 10/09/06.
2. ☒ The allowed claim(s) is/are 1-49.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All b) ☐ Some\* c) ☐ None of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

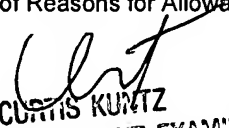
Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☒ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
  - (a) ☒ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
    - 1) ☒ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

### Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

  
CURTIS KUNTZ  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY  
9000

## DETAILED ACTION

### *Drawings*

The drawings filed on 9/9/03 are acceptable subject to correction of the following informalities: Figures 1 and 5 are too dark and Figures 2-4 and 6 contain irregular lines and lettering.

In order to avoid abandonment of this application, correction is required in reply to the Office action. The correction will not be held in abeyance.

The following is an examiner's statement of reasons for allowance: The present invention is directed to a hearing aid and a method of operating a hearing aid worn on or about the ear. Independent claim 1 identifies the uniquely distinct feature of a parameter-select device accessible to be manipulated externally from the hearing aid housing to manually select a parameter and a parameter-adjust device accessible to be manipulated externally from the hearing aid housing to manually adjust the parameter in combination with all the disclosed limitations of claim 1. Independent claim 11 identifies the uniquely distinct feature of a signal processing circuit in a hearing aid comprising a pulse detect circuit coupled between a parameter-adjust device and the processor to detect pulses generated by the parameter-adjust device and to couple a signal to the processor to indicate the detected pulses in combination with all the disclosed limitations of claim 11. Independent claim 14 identifies the uniquely distinct feature of wherein the parameter-adjust device comprising a continuous digital potentiometer to produce positive pulses when rotated in a positive direction and to produce negative pulses when rotated in a negative direction, the continuous digital potentiometer being coupled to a pulse detect circuit in the signal processing circuit and one full rotation of the continuous digital potentiometer corresponds to an entire range of values for a parameter in combination with all

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the disclosed limitations of claim 14. Independent claim 16 identifies the uniquely distinct feature of a memory map stored in the memory device comprising a plurality of four-bit addresses, each four-bit address to address one of the parameters, the memory map further comprising a range of values between a high value and a low value for each parameter, the parameters comprising a low cut filter frequency, a high cut filter frequency, a compression ratio, a threshold knee, a gain control, and an output parameter in combination with all the disclosed limitations of claim 16. Independent claim 21 identifies the uniquely distinct feature of selecting one of the parameters with a parameter-select device on an external surface of the housing; and adjusting the selected parameter with a parameter-adjust device on an external surface of the housing in combination with all the disclosed limitations of claim 21. Independent claim 23 identifies the uniquely distinct feature of rotating the parameter-select potentiometer to point a visible arrow on the parameter-select potentiometer toward one of a plurality of color-coded dots, the color-coded dots to represent parameters comprising, respectively, a low cut filter frequency, a high cut filter frequency, a compression ratio, a threshold knee, a gain control, an output parameter, full-on parameters, and best fit parameters in combination with all the disclosed limitations of claim 23. Independent claim 24 identifies the uniquely distinct feature of adjusting the selected parameter comprises: rotating a continuous digital potentiometer in a first direction to generate first pulses; rotating the continuous digital potentiometer in a second direction to generate second pulses; and detecting the pulses in a pulse detect circuit coupled to indicate the pulses to the signal processing circuit in combination with all the disclosed limitations of claim 24. Independent claim 27 identifies the uniquely distinct feature of selecting one of the parameters further comprises selecting a four-bit address stored in a memory map in an EEPROM with the parameter-select device, the four-bit address associated with one of the

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parameters and adjusting the selected parameter further comprises modifying a pointer stored in the EEPROM for the selected parameter with the parameter-adjust device, the pointer to point to a value in the memory map associated with the four-bit address for the selected parameter, each parameter being associated with a range of values between a high value and a low value; and further storing a pointer in the EEPROM for each parameter, each pointer to point to a value in the memory map for a respective parameter that is used by the signal processing circuit to process the input signal into the output signal in combination with all the disclosed limitations of claim 27. Independent claim 32 identifies the uniquely distinct feature of a memory select device on an external surface of the housing to select the first parameters in the first memory device or the second parameters in the second memory device; and a signal processing circuit coupled between the microphone, the receiver, the first memory device, and the second memory device in the housing to process the input signal from the microphone and the output signal to be transmitted to the receiver according to the first parameters or the second parameters in combination with all the disclosed limitations of claim 32. Independent claim 42 identifies the uniquely distinct feature of selecting one of a first memory device in the housing in which first parameters are stored and a second memory device in the housing in which second parameters are stored with a memory select device on an external surface of the housing, the first parameters including full-on parameters in combination with all the disclosed limitations of claim 42. Independent claim 48 identifies the uniquely distinct feature of a pulse detect circuit coupled between the memory select device and the processor to detect a pulse generated by the memory select device and to couple a signal to the processor indicating the detected pulse in combination with all the disclosed limitations of claim 48. Independent claim 49 identifies the uniquely distinct feature of a memory select device on an external surface of the housing to select the first

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parameters in the first memory device or the second parameters in the second memory device; and a signal processing circuit coupled between the microphone, the receiver, the first memory device, and the second memory device in the housing to process the input signal from the microphone and the output signal to be transmitted to the receiver according to the first parameters or the second parameters in combination with all the disclosed limitations of claim 49. The closest prior art, Ishige et al. (US 5852668) teaches a programmable hearing aid with operating switches to selectively change the hearing aid operation mode and to adjust parameters between modes but fails to teach selecting a single parameter and adjusting said parameter; Hartl et al. (US 4739512) teaches a hearing aid housing with two manually adjustable controls mounted on an external surface of the housing; Martin et al. (US 6130950) teaches a hearing device with A/D converters between adjustment elements and the signal processor; and Melanson et al. (US 6104822) teaches a DSP hearing aid with a selector switch manipulable by a user for choosing a means of signal processing. The prior art fails to anticipate or render the independent claims obvious.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Ensey whose telephone number is 571-272-7496. The examiner can normally be reached on Monday - Friday 6:30 AM - 3:00 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on 571-272-7564. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks  
P.O. Box 1450  
Alexandria, Va. 22313-1450

**Or faxed to:**

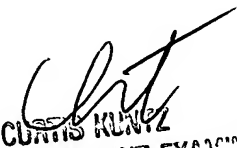
(571) 273-8300, for formal communications intended for entry and for informal or draft communications, please label "PROPOSED" or "DRAFT".

Hand-delivered responses should be brought to:

Customer Service Window  
Randolph Building  
401 Dulany Street  
Arlington, VA 22314

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BKE  
October 25, 2006

  
CURTIS KLENZ  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER